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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/534,060	09/07/2005	Glyn Wilfred Turner	032899-024	2716

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BUCHANAN, INGERSOLL & ROONEY PC  
POST OFFICE BOX 1404  
ALEXANDRIA, VA 22313-1404

EXAMINER
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BASICHAS, ALFRED

ART UNIT	PAPER NUMBER
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3749

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/27/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

## Office Action Summary

**Application No.**

10/534,060

**Applicant(s)**

TURNER ET AL.

**Examiner**

Alfred Basichas

**Art Unit**

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 05 January 2007.  
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-5 and 8-26 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1-5 and 8-26 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.  
10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 1/5/07.  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

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consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 1-17, and 20-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mutchler (5,065,736) in view of Romero (5,487,423). Mutchler discloses all of the claimed limitations including, among other things, a heater assembly comprising a radiant tube heater 26, and air flow generating means 33,41 arranged to generate an air flow over radiant tube heater located within a housing 2, the housing has a wall around the radiant tube heater so as to constrain the air flow over the tube heater, the wall defining an air flow pathway over the heater and an outlet 12 to direct the hot air to the surroundings, the housing further includes a heating duct which is connected to the outlet so as to direct hot air to a particular part of the surroundings (inherent to provide a heating duct to a heater), the radiant tube heater comprises an elongate tube 26, the air flow generating means is located close to the connection between the spiral portion 28 and the straight portion 26, wherein the joint 27 (inherently tightly sealed as to contain the exhaust and avoid air contamination) connecting the two portions, the assembly includes means for removing the products of combustion from the heater tube 8, the removing means includes an exhaust duct 8 located in fluid communication with the heater tube 26 so as to direct gaseous combustion products away from the surrounding environment, the exhaust duct is located at an open end of the heater tube, and the assembly includes a fresh air inlet duct 31 which supplies air to the radiant tube heater. Mutchler discloses substantially all of the claimed limitations, but does not specifically recite the heat exchange coil surrounding the straight portion

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arrangement arrangement. Romero teaches the claimed tube arrangement in a heat exchanger, which is how the burner tube of Mutchler acts. The particular arrangement is beneficial in terms of spatial orientation for the desired application. Accordingly, it would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate Romero's teaching of the tube arrangement into the invention disclosed by Mutchler, so as to provide for the desired application.

5. Claims 18 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mutchler in view of Romero, which combination substantially all of the claimed limitations, but does not specifically recite wheels. Official Notice is given that the use of wheels on a structure is old and well known in the art. Such an arrangement has the clear and obvious benefit of providing for convenience in mobility. Accordingly, it would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate wheels into the invention taught by Mutchler in view of Romero, so as to provide for convenience in mobility.

6. Claims 19 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mutchler in view of Romero, and further in view of Eaves (EP1217294). Mutchler in view of Romero disclose substantially all of the claimed limitations, but do not specifically recite a mesh burner head. Eaves teaches a radiant tube burner including a mesh burner head. Eaves teaches that such an arrangement provides for reduced turbulence downstream of the burner head. Accordingly, it would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the mesh burner

head arrangement taught by Eaves into the invention taught by Mutchler in view of Romero, so as to provide for reduced turbulence downstream of the burner head.

### ***Response to Arguments***

7. Applicant's arguments with respect to the claim have been considered but are moot in view of the new grounds of rejection.

a. The examiner's assertion of Official Notice is taken to be admitted prior art in view of applicants' non-traversal of the assertion. MPEP 2144.03. The examiner appreciates applicants' waiver and efforts to expedite prosecution of the instant invention by avoiding unnecessary deliberations of well known aspects of the art.

### ***Conclusion***

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the

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shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alfred Basichas whose telephone number is 571 272 4871. The examiner can normally be reached on Monday through Friday during regular business hours.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Tech Center telephone number is 571 272 3700.

March 20, 2007

  
Alfred Basichas  
Primary Examiner